

Atty. Docket No. CPAC 1017-3
Appl. No. 10/632,568

SEP 11 2006

PATENT

Remarks

Claim 1 is amended herein. No new matter is introduced by the amendment, and entry thereof is requested.

Claims 1 - 32 are in the application, of which claims 14 - 32 were withdrawn as being directed to a nonselected invention. Accordingly, claims 1 - 13 are now under consideration.

Reconsideration of the application is requested, in view of the following Remarks.

The points raised in the Office action will now be addressed.

Rejections under 35 U.S.C. § 103

Claims 1 - 7 were rejected under 35 U.S.C. §103(a) for obviousness over Applicant's description in Background ("APA") in view of Massit *et al.* U.S. 5,373,189 ("Massit"). The Examiner asserted, regarding Claim 1, that:

APA discloses a multipackage module having a second package stacked over a first package (PRIOR ART FIG. 2), each said package comprising a die (24 and 14, PRIOR ART FIG. 2), the second package substrate and the first package substrate being interconnected, wherein the first package further comprises solder balls (18, PRIOR ART FIG. 2) connected to bonding pads (12, PRIOR ART FIG. 2) at a second side of the package substrate (12, PRIOR ART FIG. 2).

The Examiner acknowledged that APA does not disclose "wherein the second package is wire bonded to the first package." The Examiner asserted that "Massit discloses a stacked package arrangement wherein the second package substrate (4b, Fig. 1) and the first package substrate (4a, Fig. 1) are interconnected by wire bonds (13b, Fig. 1)"; and argued that it would have been obvious:

to interconnect the substrates of APA's structure with wire bonds as taught by Massit (Fig. 1) for the purpose of electrical communication between the various modules as taught by Massit (Col. 4).

Claim 1 is amended herein to recite that the interconnection the second package substrate and the first package substrate is by wire bonds connecting interconnect pads near at least two opposite edges of the second package substrate with pads at the first side of the first package substrate. (See, e.g., Applicant's Figs. 5A [sectional view], 5B, 5C [plan views].)

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Massit describes a 3D multichip module in which

The elementary modules ... are superimposed in the manner of a staircase, i.e. the module 4b is placed on the module 4a so as to be slightly displaced with respect to the edge of the module 4a. Thus, that part of the support 6a and that part of the interconnection network 8a which are not covered by the elementary module 4b have at least one connection pad 12a."

(Massit, Col. 4, lines 21 - 27.). The displacement can be in one direction, in which interconnection between the modules is at one edge of each module (and the other three edges of a lower module are covered by an upper module, *see*, feature 1b in Massit Figs. 3a, 3b); or in two directions, in which connection is at two adjacent edges of each module (and the edges opposite the two adjacent edges are covered, *see*, feature 1a in Massit Figs. 3a, 3b).

Massit does not teach or suggest interconnection at at least two opposite module edges, as in Applicant's amended claim 1. To the extent Massit may be relevant, it teaches away from Applicant's claimed invention.

No combination of Massit with Applicant's description in background ("APA") makes Applicant's claimed invention, and the rejections for obviousness over APA in view of Massit should be withdrawn.

Claims 8 - 13 were rejected under 35 U.S.C. §103(a) for obviousness over APA in view of Massit and further in view of Chen *et al.* U.S. 6,472,741 ("Chen"). This rejection is traversed.

Chen is relied upon as teaching a heat spreader (claims 8 - 10) which, the Examiner argues (claims 11 - 13), one could "realize ... as an electromagnetic shield ... since it is composed of metal."

This rejection is traversed. Even if there were a motivation to combine Chen with APA and Massit, no such combination makes Applicant's invention, because -- as explained above -- there is no teaching or suggestion in Massit combined with APA of interconnection at at least two opposite module edges.

Accordingly Applicant's invention as claimed is not taught or suggested by any combination of the cited patents and, accordingly, the rejections for obviousness should be withdrawn.

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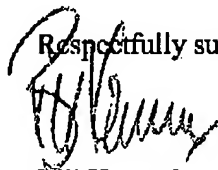
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In view of the foregoing, all the claims now in the application are believed to be in condition for allowance, and action to that effect is respectfully requested

This Response is being filed within the third month following the three months' shortened statutory period set by the Examiner for response to the Office action and, accordingly, it is accompanied by a Petition for three month's extension of time and a fee or fee authorization therefor. In the event the Examiner may determine that additional fee[s] may be required in connection with the filing of this paper, petition is hereby made therefor, and the Commissioner is authorized to charge any additional fee (or to credit any overpayment) to Deposit Account No. 50-0869 (CPAC 1017-3).

If the Examiner determines that a conference would facilitate prosecution of this application, the Examiner is invited to telephone Applicants' representative, undersigned, at the telephone number set out below.

Respectfully submitted,

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